

Attorney Docket No.: 5784.210-US
USSN: 09/671,461
Filed: 09/27/2000
Inventor: Arne Staby
Express Mail Label No.: EV 450789383 US

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims

Claim 1 (Cancelled)

Claim 2 (Currently Amended) A method for purifying a peptide from a mixture comprising said peptide and related impurities, said method comprising:

- a) eluting said related impurities of said mixture from an anion exchange chromatography matrix using a solution comprising an organic modifier, water, optionally a salt component and optionally a buffer, at a linear or step gradient or isocratically in salt component, and at pH-values optionally maintained with a buffer so that said peptide has a negative local or overall net charge and said related impurities have a local or overall negative net charge which is lower than the negative net charge of said peptide so as to remove said related impurities; and without an intervening step,
- b) subsequently, eluting said peptide in the absence of an organic modifier, by a step or linear change to an aqueous solvent optionally with a salt component, at the same or lower pH-values optionally maintained with a buffer.

Claim 3 (Cancelled)

Claim 4 (Currently Amended) An industrial method for producing a pure peptide from a mixture comprising said peptide and related impurities, said method comprising:

- a) eluting said related impurities of said mixture from an anion exchange chromatography matrix using a solution consisting essentially of an organic modifier, water, optionally a salt component and optionally a buffer, at a linear or step gradient or isocratically in salt component, and at pH-values optionally maintained with a buffer so that said peptide has a negative local or overall net charge and said related impurities have a local or overall negative

Attorney Docket No.: 5784.210-US
USSN: 09/671,461
Filed: 09/27/2000
Inventor: Arne Staby
Express Mail Label No.: EV 450789383 US

net charge which is lower than the negative net charge of said peptide so as to remove said related impurities; and without an intervening step.

b) subsequently, eluting said peptide in the absence of an organic modifier, by a step or linear change to an aqueous solvent optionally with a salt component, at the same or lower pH-values optionally maintained with a buffer.

Claim 5 (Cancelled)

Claim 6 (Currently Amended) The method according to claim 1 further comprising subjecting the peptide eluted in step (b) to analytical tests and/or further purification.

Claims 7-10 (Cancelled)

Claim 11 (Currently Amended) The method of claim 2, wherein said peptide to be purified is selected from polypeptides, oligopeptides, proteins, and receptors, ~~as well as homologs, analogs and derivatives thereof.~~

Claim 12 (Currently Amended) The method of claim 2, wherein said peptide to be purified is selected from glucagon, hGH, insulin, FactorVII, FactorVIIa, FactorVIIai, FFR-FactorVIIa, glucagon-like peptide-1, glucagon-like peptide-2 and analogs, ~~as well as derivatives thereof.~~

Claim 13 (Previously Presented) The method of claim 2, wherein the ratio of organic modifier to water on a weight percent basis is from 1:99 to 99:1.

Claim 14 (Previously Presented) The method of claim 2, wherein the organic modifier is selected from C₁₋₆-alkanol, C₁₋₆-alkenol, C₁₋₆-alkynol, urea, guanidine, C₁₋₆-alkanoic acid, C₂₋₆-glycol, or C₃₋₇-polyalcohol.

Attorney Docket No.: 5784.210-US
USSN: 09/671,461
Filed: 09/27/2000
Inventor: Arne Staby
Express Mail Label No.: EV 450789383 US

Claim 15 (Currently Amended) The method according to claim 1-2, wherein the peptide is selected from the group consisting of Val⁸GLP-1(7-37), Thr⁸GLP-1(7-37), Met⁸GLP-1(7-37), Gly⁸GLP-1(7-37), Val⁸GLP-1(7-36) amide, Thr⁸GLP-1(7-36) amide, Met⁸GLP-1(7-36) amide, Gly⁸GLP-1(7-36) amide, Arg³⁴GLP-1(7-37), and B28IsoAsp insulin.

Claim 16 (New) The method according to claim 4 further comprising subjecting the peptide eluted in step (b) to analytical tests and/or further purification.

Claim 17 (New) The method according to claim 4, wherein said peptide to be purified is selected from polypeptides, oligopeptides, proteins, and receptors.

Claim 18 (New) The method according to claim 4, wherein said peptide to be purified is selected from glucagon, hGH, insulin, FactorVII, FactorVIIa, FactorVIIai, FFR-FactorVIIa, glucagon-like peptide-1, glucagon-like peptide-2 and analogs thereof.

Claim 19 (New) The method according to claim 4, wherein the ratio of organic modifier to water on a weight percent basis is from 1:99 to 99:1.

Claim 20 (New) The method according to claim 4, wherein the organic modifier is selected from C₁₋₆-alkanol, C₁₋₆-alkenol, C₁₋₆-alkynol, urea, guanidine, C₁₋₆-alkanoic acid, C₂₋₆-glycol, or C₃₋₇-polyalcohol.

Claim 21 (New) A method for purifying a peptide selected from glucagon, hGH, insulin, FactorVII, FactorVIIa, FactorVIIai, FFR-FactorVIIa, glucagon-like peptide-1, and glucagon-like peptide-2 and analogs thereof from a mixture comprising said peptide and related impurities, said method comprising:

a) eluting said related impurities of said mixture from an anion exchange chromatography matrix using a solution comprising an organic modifier, water, optionally a salt component and optionally a buffer, at a linear or step gradient or isocratically in salt component, and at

Attorney Docket No.: 5784.210-US
USSN: 09/671,461
Filed: 09/27/2000
Inventor: Arne Staby
Express Mail Label No.: EV 450789383 US

pH-values optionally maintained with a buffer so that said peptide has a negative local or overall net charge and said related impurities have a local or overall negative net charge which is lower than the negative net charge of said peptide so as to remove said related impurities; and

b) subsequently, eluting said peptide in the absence of an organic modifier, by a step or linear change to an aqueous solvent optionally with a salt component, at the same or lower pH-values optionally maintained with a buffer.

Claim 22 (New) The method according to claim 21, wherein said peptide is glucagon-like peptide-1 or an analog thereof.

Claim 23 (New) The method according to claim 22, wherein said glucagon-like peptide-1 analog is selected from the group consisting of Val⁸GLP-1(7-37), Thr⁸GLP-1(7-37), Met⁸GLP-1(7-37), Gly⁸GLP-1(7-37), Val⁸GLP-1(7-36) amide, Thr⁸GLP-1(7-36) amide, Met⁸GLP-1(7-36) amide, Gly⁸GLP-1(7-36) amide and Arg³⁴GLP-1₍₇₋₃₇₎.

Claim 24 (New) The method according to claim 21, wherein said peptide is insulin or an analog thereof.

Claim 25 (New) The method according to claim 24, wherein said insulin analog is B28IsoAsp insulin.